Air Quality FAQ for Landfills

Q1: When submitting information or an application, where should it be sent?

A1: Landfills are required to comply with solid waste and air quality rules as regulated by the DNR. Landfills need to submit solid waste applications to the Waste Management section of the Land Quality Bureau and air quality applications to the Air Quality Bureau. The Air Quality Bureau is the administrator for New Source Performance Standards (NSPS) Subparts WWW, Cc, and National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart AAAA as well as the Title V Operating Permit and air related construction permits required for sources located at the landfill (NOTE: see last page for details on subparts).

Q2: What required reports does the Air Quality Bureau review?

A2: NSPS Subpart WWW requires the submittal of design capacity reports, emission reports for NMOC (non-methane organic compounds), and the review of design plans for gas collection and control systems (GCCS). If any of these are required in a subpart (i.e. WWW, Cc, AAAA) then it should be sent to the Air Quality Bureau. (NOTE: For GCCS design plans, landfills should submit one copy to Air Quality and one copy to the Waste Management section of the Land Quality Bureau).

Q3: Is my landfill subject to NSPS Subpart WWW or Subpart Cc and what are the general requirements?

A3: Any landfill that commenced construction, reconstruction or modification on or after May 30, 1991 is subject to NSPS Subpart WWW. Any landfill that commenced construction, reconstruction or modification before May 30, 1991 is subject to NSPS Subpart Cc. All landfills are required to submit a design capacity report. If the design capacity is equal to or greater than 2.5 million megagrams **and** 2.5 million cubic meters, the landfill is required to apply for a Title V Operating Permit and is required to calculate NMOC emissions.

Q4: What is meant by the term "design capacity"?

A4: The definition of "design capacity" states that it includes the maximum amount of solid waste that the landfill can accept and must include any in-place waste not accounted for in the most recent permit issued by DNR Waste Management. If a landfill is closed, but is co-located to the new landfill, it must be included in the total design capacity.

Any municipal solid waste (MSW) landfill is required to submit an initial design capacity report to the Compliance Section of the Air Quality Bureau. An amended design capacity report as described in 40CFR§60.757(a)(3) is required for any increase in the maximum design capacity of the landfill to or above 2.5 million megagrams and 2.5 million cubic meters. (NOTE: 40CFR§60.757(a)(3) refers to Part 40 of the Code of Federal Regulations Section 60.757(a)(3)).

Example One: A landfill has a design capacity of greater than 2.5 million cubic meters and greater than 2.5 million megagrams. Construction has not commenced.

Requirements: The landfill is not required to apply for a Title V Operating Permit or calculate the NMOC emission rate as construction has not commenced.

Example Two: A landfill has a design capacity of greater than 2.5 million cubic meters and less than 2.5 million megagrams.

Requirements: The landfill is required to submit a design capacity report, however the landfill is not required to apply for a Title V Operating Permit and NMOC calculations are not required.

Example Three: A landfill has expanded and the design capacity is now greater than 2.5 million cubic meters and greater than 2.5 million megagrams. Construction has commenced.

Requirements: The landfill is required to submit: an updated design capacity report; NMOC calculations; and apply to obtain a Title V Operating Permit.

The following table is a summary of the applicability requirements for NSPS Subpart WWW and Cc.

Based on 40 CFR 60.32c-60.33c and 40 CFR 60.752

Design Capacity (Million Mg and/or Million m3)	Emissions (Mg/yr NMOC)	Design Capacity Report Required	Periodic NMOC Emission Reports Required	Controls Required	Title V Permit Required
<2.5 (Mg or m3)	< 50	Yes	No	No	*
<2.5 (Mg or m3)	> 50	Yes	No	No	*
>2.5 (Mg and m3)	< 50	Yes	Yes	No	Yes
>2.5 (Mg and m3)	> 50	Yes	No	Yes	Yes

* The landfills NSPS and EG (Subpart Cc – Emission Guidelines and Compliance Times for MSW Landfills) does not require a part 70 or 71 operating permit for these landfills, but part 70 or 71 requires a permit if the landfill is a major source as defined in part 70 or 71 or is subject to part 70 or 71 or for some other reason (e.g., subject to another NSPS or NESHAP). A landfill is a major source and requires a Title V permit if the air emissions are > 100 tons/yr of criteria pollutants or the HAP (Hazardous Air Pollutants) emissions are >10 tons/yr for one HAP or 25 tons/yr for a combination of HAP's or if it emits major source levels of criteria pollutants such as VOC (major source thresholds are different for attainment and nonattainment areas-- See the definition in 40 CFR Section 70.3(a)).

Q5: A landfill's design capacity is over 2.5 million megagrams and 2.5 million cubic meters and construction has taken place. What is required of the landfill?

A5: Per Subpart WWW or Cc, the landfill is required to calculate NMOC emissions annually or install a GCCS. The method to calculate NMOC emissions is Tier 1. If NMOC (non-methane organic compounds, which include volatile organic compounds (VOC) as well as other organic compounds) emissions are equal to or greater than 50 Mg NMOC per year, a GCCS is required or Tier 2 shall be completed and submitted to the Air Quality Bureau for review. If Tier 2 emissions still are equal to or greater than 50 Mg NMOC per year, a GCCS is required or Tier 3 may be completed. If Tier 3 is equal to or greater than 50 Mg NMOC per year then a GCCS is required.

Q6: What is an approved method to calculate Tier 1 results?

A6: The latest version of LandGEM, the EPA approved model to calculate NMOC or using the procedures described in 40 CFR 60.754 of subpart WWW. Any method used requires documentation to be submitted (i.e. CD of LandGEM for the landfill). The NMOC emission rate report is required annually or as allowed per NSPS Subpart WWW starting at Part 40 CFR§60.750.

Q7: What is the difference between Tier 1, Tier 2 and Tier 3?

A7: Tier 1 uses default values to determine the NMOC emission rate. Tier 2 calculates the NMOC emission rate using the site-specific NMOC concentration (C_{NMOC}) and Tier 3 calculates the NMOC emission rate using the site-specific methane generation rate constant (k).

Q8: What is considered a modification for a landfill?

A8: A modification is an increase in the permitted volume design capacity of a landfill by either vertical or horizontal expansion. For the modification to have occurred, the owner or operator must have **commenced construction** on the horizontal or vertical expansion. If a vertical (upward) or horizontal (lateral) expansion increases the design capacity of the landfill above the previously permitted level then it is a modification. Furthermore, adding a new MSW landfill area at the same location as an existing MSW landfill causes the entire site (contiguous geographic area) to be considered a modified landfill subject to the NSPS.
If an existing landfill makes an operational change, then it will continue to be subject to Subpart Cc rather than becoming subject to Subpart WWW. For example, an increase in design capacity may result from not only an increase in the permitted volume of the landfill but also from an increase in the density as documented in the annual recalculation required in §60.758(f). This density change is not a modification, and does not subject an existing landfill to the NSPS; but if capacity is increased to 2.5 million Mg and 2.5 million cubic meters in this way, the landfill would file an amended design capacity report under the EG (emission guidelines for Subpart Cc) and perform the NMOC emission rate calculation to determine if control is required.

Q9: What constitutes *commenced construction*?

A9: The Air Quality Bureau considers that construction has commenced when the Waste Management section has authorized the landfill to install the liner of the newly formed cell.

Q10: When is an air construction permit required?

A10: Air construction permits are required for any emission unit with a stack, vent or opening that isn't otherwise considered exempt from permitting. Since the emissions from a landfill can be captured, it is not considered a fugitive source and an air construction permit is required. Construction permits are also required for units at the landfill such as: flares, combustion units, generators, or shredders/grinders.

Q11: Is the landfill subject to NESHAP Subpart AAAA?

A11: You are subject to AAAA if the MSW landfill has accepted waste since November 8, 1987 and any one of the following applies:

1) The MSW landfill is a major source of HAPs[1] (Hazardous Air Pollutants); or
2) The MSW landfill is collocated with a major source of HAPs; or
3) The MSW landfill is an area source of HAPs[2] that has a design capacity of equal to or greater than 2.5 million Mg and 2.5 million cubic meters and has estimated uncontrolled NMOC emissions equal to or greater than 50 Mg/yr.
4) The MSW landfill is an area source of HAPs that has a design capacity of equal to or greater than 2.5 million Mg and 2.5 million cubic meters, includes a bioreactor and that is not permanently closed as of January 16, 2003.

[1]**Major source of HAPs**: means any stationary source or group of stationary sources located within a contiguous area under common control that emits or has the potential to emit 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.

[2]**Area source of HAPs**: means any stationary source of hazardous air pollutants that is not a major source. An area source has the potential to emit less than 10 tons per year for any hazardous air pollutant and less than 25 tons per year for any combination of hazardous air pollutants.

Q12: Who is the contact at the Air Quality Bureau?

A12:

Doug Campbell	Title V Supervisor	515-281-8930
Brian Hutchins	Compliance Assistance Supervisor	515-281-8448
Marnie Stein	Emission Inventory/GHGs	515-281-8468
Mark Goedken	Air Construction Permitting	515-281-5012
DNR Helpline	For air construction permitting or general questions 1-877-AIR-IOWA (1-877-247-4692)	

Any submission to the Air Quality Bureau should include the landfill contact information in the cover letter. This includes: landfill name, plant number if known (Air Quality plant number, not the number assigned by the Waste Management section), contact name at the landfill, landfill address, mailing address and phone number.

When applying for an air construction permit, the owner or operator of a landfill is required to submit a complete air construction permit application. Forms to include are: FI, EU (for the landfill), EU1 (for engine, if necessary), EP, EC, EI, GHG, MI1, MI2, and FRA. A cover letter should be attached to all permit applications. (NOTE: an EU, EP and EI should be included for each emission unit to be permitted). **See web link #6 below.**

NSPS/NESHAPs/Web Links:

1. NSPS Subpart WWW (40CFR§60.750): Standards of Performance for Municipal Solid Waste Landfills. Applies to each existing MSW landfill for which construction, reconstruction or modification was commenced after May 30, 1991.
http://www.epa.gov/ttn/atw/landfill/landflpg.html

2. NSPS Subpart Cc (40CFR§60.30c): Emission Guidelines and Compliance times for Municipal Solid Waste Landfills. Applies to each existing MSW landfill for which construction, reconstruction or modification was commenced before May 30, 1991.
http://www.tceq.state.tx.us/permitting/air/rules/federal/60/60hmpg.html

3. NESHAP Subpart AAAA (40CFR§63.1930): National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills.
http://www.epa.gov/ttn/atw/mactfnlalph.html

4. Landfill Gas Primer - An Overview for Environmental Health Professionals.
http://www.atsdr.cdc.gov/HAC/landfill/html/toc.html

5. AP 42: Municipal Solid Waste Landfills/LandGem 3.02
http://www.epa.gov/ttn/chief/ap42/ch02/index.html

6. IDNR Air Quality Website: www.iowacleanair.com
(NOTE: air construction permit application forms are located here via the "Construction Permits" section)